

Work Order ID 166351

Monday, September 18, 2017 8:52:31 AM

166351

Page 1

Item ID: D407-836-017

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Crosstube Antenna Mount 407 Aft (P162-407A)

Start Date: 9/18/2017 Start Qty: 1.00

1

Cust Item ID:

Required Date: 9/20/2017 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

DAS

21

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

9-89

Date:

SEP 18 2017

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
GA202-2	A

SEP 17 2017
S4

100

Document Control

0.00

100

DC

Memo

0.00

Doc.Control -USB or Paperwork

Photocopy bluefile and create labels as per PPP D407-836-017 CH001

DAS
28
9-89

SEP 19 2017

110

Pick Kit

0.00

110

Packaging

Memo

0.00

Packaging

DAS
6
9-89

SEP 19 2017

DAS
27
9-89

120

QC4- 100% Inspect kits for completeness

0.00

120

QC

Memo

0.03

Quality Control

DAS
28
9-89

SEP 19 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

Work Order ID 166351***166351***

Page 2

Monday, September 18, 2017 8:52:31 AM

Item ID: D407-836-017

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Crosstube Antenna Mount 407 Aft (P162-407A)

Start Date: 9/18/2017 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 9/20/2017 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	Identify as per dwg & Stock Location: Eg/22	0.00							
130									
Packaging	Memo	0.00							
Packaging	Identify and pack for shipping as per PPP D407-836-017								
	Location: _____								
	PPP Rev: _____								
140	QC21- Final Inspection - Work Order Release	0.00							
140									
QC	Memo	0.10							
Quality Control									

DAS
28
9-89**SEP 19 2017****17/9/20****Wm 17/9/20**

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
								Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	

Root Cause			FAULT CATEGORY							
Environment ☐	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong
Design ☐	☐	Operator	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions
Doc/Data ☐	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance
Equip/Tooling ☐	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect
Handling/Pre ☐	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing
Material ☐	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved
Internal Transport ☐	☐	Poor Information	☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing
Tribal Knowledge ☐	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish
LOA ☐	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread
Substation ☐	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence
Past Expiry Date ☐	☐	Manufacturing Process	OTHER :							
Misidentified ☐	☐	Past Due								

Picklist Print

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Page 1

Work Order ID: 166351

166351

Parent Item: D407-836-017

D407-836-017

Parent Item Name: Crosstube Antenna Mount 407 Aft (P162-407A)

Start Date: 9/18/2017

Required Date: 9/20/2017

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP REV:A 13.07.18 AS PER ECN13-561 DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D4853-1 *D4853-1* Top Bracket		Manufactured	No			110	Each	10.0000	1 **	1			
DAS 28 9-89 SEP 19 2017 9-89 DAS 27 9-89													
						<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>					
						ST519	10						
						161854	10						
D4854-1 *D4854-1* Lower Bracket		Manufactured	No			110	Each	6.0000	1 **	1			
DAS 28 9-89 SEP 19 2017 9-89 DAS 27 9-89													
						<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>					
						st526	6						
						164734	6						
D4855-1 *D4855-1* Antenna Bracket		Manufactured	No			110	Each	14.0000	1 **	1			
DAS 28 9-89 SEP 19 2017 9-89 DAS 27 9-89													
						<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>					
						st526	14						
						163434	4						
						164938	10						
D2732-030 *D2732-030* Rubber Cushion - 3"		Manufactured	No			110	Each	324.0000	2 **	2			
DAS 28 9-89 SEP 19 2017 9-89 DAS 27 9-89													
						<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>					
						FG	96						
						158347	96						
						ST410	228						
						164308	200						
						164309	28						

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐								
Misidentified ☐	Past Due ☐								
		OTHER : ☐							

Picklist Print

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Work Order ID: 166351

166351

Parent Item: D407-836-017

D407-836-017

Parent Item Name: Crosstube Antenna Mount 407 Aft (P162-407A)

Start Date: 9/18/2017

Required Date: 9/20/2017

Start Qty: 1.00

Required Qty: 1.00

AN4-16A Purchased No 110 Each 168.0000 2 2

AN4-16A

Bolt

**

DAS
28
9-89

Location

Loc Qty

Loc Code

FG 5
121541 5
ST343 163
m138238 163

DAS
6
9-89
SEP 19 2017
DAS
27
9-89

AN4-11A Purchased No 110 Each 208.0000 2 2

AN4-11A

BOLT

**

DAS
28
9-89

Location

Loc Qty

Loc Code

FG 20
120731 20
ST344 188
M138408 188

DAS
6
9-89
SEP 19 2017
DAS
27
9-89

NAS1149D0432J Purchased No 110 Each 872.0000 8 8

NAS1149D0432J

WASHER

**

DAS
28
9-89

Location

Loc Qty

Loc Code

GA 24
m131026 24
ST264 848
m137459 848

DAS
6
9-89
SEP 19 2017
DAS
27
9-89

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
Date: _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval																																																										
Description Work Order Deviation				Disposition				Completed By _____ Lead hand / Supervisor Approval Verification _____ QC / QA Coordinator Approval _____																																																									
Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____			
Misidentified ☐	Past Due ☐																																																																

Picklist Print

Monday, September 18, 2017 8:52:36 AM

Work Order ID: 166351

166351

Parent Item: D407-836-017

D407-836-017

Parent Item Name: Crosstube Antenna Mount 407 Aft (P162-407A)

Start Date: 9/18/2017

Required Date: 9/20/2017

Start Qty: 1.00

Required Qty: 1.00

MS21042L4

Purchased

No

110

Each

1,772.000

4

4

MS21042L4

Nut

**

DAS
27
9-89

DAS
28
9-89

Location

Loc Qty

Loc Code

FP001

10

m133363

10

OVER007

500

m138230

500

ST303

1262

m138170

500

m138326

762

DAS
28
9-89
SEP 19 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step # : _____		QTY Effective : _____			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
							Completed By		
							Lead hand / Supervisor Approval Verification		
							QC / QA Coordinator Approval		
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
OTHER : ☐									

- 25.2.3. Although it is not generally necessary, it is acceptable to use longer or shorter AN4 bolts to ensure 1.5-4 threads in safety on the nuts. Additional NAS1149D0432J washers may also be installed under the nuts.

25.3. PARTS LIST

Qty -011	Qty -013	Qty -015	Qty -017	Qty -111	Part Number	Description
X					D206-836-011	CROSSTUBE ANTENNA MOUNT KIT 206A/B AND 206L FWD (P162-206)
	X				D206-836-013	CROSSTUBE ANTENNA MOUNT KIT 206L AFT (P162-206L)
		X			D407-836-015	CROSSTUBE ANTENNA MOUNT KIT 407 FWD (P162-407F)
			X		D407-836-017	CROSSTUBE ANTENNA MOUNT KIT 407 AFT (P162-407A)
				X	D206-836-111	CROSSTUBE ANTENNA MOUNT KIT UNIVERSAL (P162-U)
			1	1	D4853-1	TOP BRACKET (REPLACES P/N G13013-1)
1				1	D4853-3	TOP BRACKET (REPLACES P/N G13013-5)
		1		1	D4853-5	TOP BRACKET (REPLACES P/N G13013-7)
	1			1	D4853-7	TOP BRACKET (REPLACES P/N G13013-9)
			1	1	D4854-1	LOWER BRACKET (REPLACES P/N G13013-2)
1				1	D4854-3	LOWER BRACKET (REPLACES P/N G13013-6)
		1		1	D4854-5	LOWER BRACKET (REPLACES P/N G13013-8)
	1			1	D4854-7	LOWER BRACKET (REPLACES P/N G13013-10)
1	1	1	1	1	D4855-1	ANTENNA BRACKET (REPLACES P/N G13013-3)
2	2	2	2	2	D2732-030	RUBBER CUSHION (REPLACES P/N G13013-4)
2	2	2	2	2	AN4-16A	BOLT
2	2	2	2	2	AN4-11A	BOLT
8	8	8	8	8	NAS1149D0432J	WASHER
4	4	4	4	4	MS21042L4	LOCKNUT

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OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.

Revision: 0

25-00-00

Monday, September 18, 2017 8:52:31 AM

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[illegible]

United States of America
Department of Transportation - Federal Aviation Administration
Supplemental Type Certificate

Number SR02253SE

This certificate, issued to

Dart Aerospace USA, Inc.
190 S. Danebo Ave.
Eugene, OR 97402

*certifies that the change in the type design for the following product with the limitations and conditions therefore as specified hereon meets the airworthiness requirements of Part * of the * Regulations.*

Original Product—Type Certificate Number:

* See attached Federal Aviation Administration (FAA)

Make:

Approved Model List (AML) SR02253SE for a list of

Model:

approved models and applicable airworthiness regulations

Description of the Type Design Change: Fabrication of Geneva Aviation P162 Cross-Tube Antenna Mounts in accordance with Master Drawing List GA202, Revision "--," dated September 30, 2011, or later FAA-approved revision; and installation and maintenance of this assembly in accordance with the documents shown on AML SR02253SE.

This supplemental type certificate does not include approval or installation of any antenna.

Limitations and Conditions: Approval of this change in type design applies to the rotorcraft listed in AML SR02253SE only. This approval should not be extended to other rotorcraft of this model on which other previously approved modifications are incorporated unless it is determined by the installer that the relationship between this change and any of the other previously approved modifications, including changes in type design, will introduce no adverse effect upon the airworthiness of that helicopter. A copy of this certificate, AML SR02253SE, and the appropriate Instructions for Continued Airworthiness as listed on AML SR02253SE, must be maintained as part of the permanent records of the modified rotorcraft.

If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person written evidence of that permission.

This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, revoked, or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.

Date of application: September 30, 2012

Date reissued: January 16, 2013; October 28, 2015

Date of issuance: December 21, 2012

Date amended:



By direction of the Administrator

Audria Brown
(Signature)

for Manager, Seattle Aircraft Certification Office
(Title)

Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both.

This certificate may be transferred in accordance with FAR 21.47.